W5YI

Nation's Oldest Ham Radio Newsletter

REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable. May be reproduced providing credit is given to The W5YI Report.

FCC Approves Automatic Control of HF Packet

As part of its commitment to provide maximum flexibility to the amateur service community, the FCC Commissioners on April 17th amended it rules to permit automatic control of HF digital communications. The *Report and Order comes* nearly a year after the FCC released the text of a *Notice of Proposed Rulemaking.*

Automatic control is defined in the rules as the control of an amateur station without the operator being present at a control point. The HF bands allow for long distance communications. The variables affecting communications in the HF bands are highly complex. Ordinarily to avoid causing interference to other amateur stations, the control operator must constantly monitor the activity on the frequency being used.

Background

The proceeding got its start when two petitions were filed by the American Radio Relay League (RM-8218) and the American Digital Radio Society (RM-8280). Even though the amateur service message forwarding rules were revised last June, automatic control of stations transmitting on the HF bands was not authorized.

Automatic control of amateur stations transmitting digital communications on the VHF and higher frequency bands was first authorized in 1986. This allowed amateur operators to use high speed computer-based packet radio technology to quickly and accurately exchange messages. The FCC also said at the time they were interested in authorizing automatic control of stations transmitting digital communications in the HF bands. Amateur stations are authorized to transmit a RTTY or data emission between 3.50-3.75, 7.000-7.150, 10.10-10.15, 14.00-14.15, 18.068-18.110, 21.0-21.2, 24.89-24.93 and 28.0-28.3 MHz.

An HF packet feasibility study was carried out under a *Special Temporary Authority* granted by the FCC. Some fifty amateur stations operated as an automated digital communications network on the 20 meter HF band. This STA continued in effect for some five years. The big concern was that HF packet "robot" stations could interfere with ongoing HF ham band operation. The matter became very controversial among HF phone operators. A compromise plan to permit semi-automatic control was criticized as unworkable and unacceptable by HF packeteers.

The ultimate answer came when an IARU (International Amateur Radio Union) Region 2 General Assembly meeting produced an HF band plan which provided for automatically controlled data communications subbands. These segments included all bands between 80 and 10 meters and provided for all digital modes including new Clover and Pactor systems. Any HF data operation outside these segments had to be under local control. This subband plan was accepted by the ARRL who agreed that segregating HF packet to specific frequencies within

the eight HF bands would alert other HF stations that they may receive interference from automatically controlled stations if they operated in these subbands.

The American Digital Radio Society agreed that communications between automatically controlled stations should be confined to subbands. ADRS also concurred with a provision in the IARU HF band plan which permitted HF packet communications on any frequency authorized for data and RTTY communications as long as one of the stations has a control operator who could terminate the transmissions from all the stations. The ARRL supported this position.

Notice of Proposed Rulemaking issued

Last June, the Commission proposed to change the rules to authorize automatic control for stations transmitting data and RTTY emission types on the HF subbands as suggested by the ARRL and the ADRS. "These proposed rules are intended to facilitate the development of digital communications on the HF amateur service bands," the FCC said. The formal comment period on the NPRM ended on October 1, 1994.

The new rule changes

The FCC issued a press release on April 19th which said "The automatically controlled station must either be connected to another station that is under manual control, or the automatically controlled station must transmit within a subband designated for that purpose."

The actual text of the *Report and Order* has yet to be issued but our understanding is that the new rules were adopted as proposed:

§97.109 Station control.

(d)   When a station is being automatically controlled, the control operator need not be at the control point. Only stations specifically designated elsewhere in this Part may be automatically controlled. Automatic control must cease upon notification by an EIC that the station is transmitting improperly or causing harmful interference to other stations. Automatic control must not be resumed without prior approval of the EIC.

(e)   No station may be automatically controlled while transmitting third party communications, except a station transmitting a RTTY or data emission. All messages that are retransmitted must originate at a station that is being locally or remotely controlled.

New Section 97.221 to read as follows:
§ 97.221 Automatically controlled digital station.

(a)   This rule section does not apply to an auxiliary station, a beacon station, a repeater station, an earth station, a space station, or space telecommand station.

(b)   A station may be automatically controlled while transmitting RTTY or data emissions on the 6 m or shorter wavelength bands, and on the 28.120-28.189 MHz, 24.925-24.930 MHz, 21.090-21.100 MHz, 18.105-18.110 MHz, 14.0950-14.0995 MHz, 14.1005-14.112 MHz, 10.140-10.150 MHz, 7.100-7.105 MHz, or 3.620-3.635 MHz segments.

(c)   A station may be automatically controlled while transmitting a RTTY or data emission on any other frequency authorized for such emission types provided that:

(1)   The station is responding to interrogation by a station under local or remote control: and

(2)   No transmission from the automatically controlled station occupies a bandwidth of more than 500 Hz.

PETITIONS FOR RECONSIDERATION FILED ON VANITY CALL SIGN PROOCEEDING

According the FCC, the most asked question is "How can I get a specific call sign?" Special station call signs have not been available since the mid-1970's when Extra Class amateurs were permitted to select an available station call.

This past summer, Congress surprised the amateur community by including a provision for "vanity" amateur station call signs in President Clinton's much publicized Deficit Reduction Plan. The legislation authorizes the Federal Communications Commission to issue unique amateur station call signs at a cost of $7.00 per year to the general ham radio population.

This action was largely the result of a single amateur who told his congressman that amateurs were indeed willing to pay for a special call sign. It came at an opportune time when the Clinton administration was looking for ways to generate revenue. Clinton signed the legislation into law on August 10, 1994. The Commission now has the authority to charge for special ham call signs.

The vanity call sign program supposedly was to be starting up within 30 days, but the program will now be delayed until the FCC addresses five *Petitions for Reconsideration*. According to the rules, requests for reconsideration must be filed within 30 days of an order. That would have been March 1, 1995. (We understand that one of *Petitions for Reconsideration* was filed late.)

The American Radio Relay League believes amateurs should be eligible for station call signs that are available only within their own geographic district. Another petitioner did not want an amateur applying for the station call sign of a deceased relative unless he/she held at least the license class level of the deceased. For example, a Technician Class daughter

(who ordinarily would be eligible for a Group C or D call sign) should not be allowed to obtain the Extra Class (Group A) call sign of her father.

Other *Petitions for Reconsideration* dealt with how long after you die before your call sign will be available to the Vanity call sign system ...and amateur radio clubs should be allowed to apply for a vanity call sign earlier than "Gate four" if they have a consent letter from a relative of a deceased amateur. So the start of the vanity call sign program will be impacted by decisions yet to be made. And the Government moves slow.

The vanity call sign application Form 610-V has been sent over to the Office of Management and Budget for clearance, but it can't be implemented until the Reconsideration issues are decided. This is the form on which you will list your 25 call sign choices in order of preference. The best guess now, it that it will be late summer before the vanity call sign application form will be available. And that is assuming that no new rules necessitate another change in the form. If more changes are needed, then the review process starts all over again. Even the call sign software programming (which is already completed) could be affected. If it is, then further delays will result. So no one really knows when special call signs will become available.

The FCC told us that it will probably initiate a proceeding itself to determine how to handle one-by-one call signs. These are the 780 call signs with one prefix letter, one numeral and one suffix letter. (For example: W1A.) The ARRL wants these call signs assigned to special event stations.

Club call signs, however, which had not been issued since 1978, are now being issued in wholesale fashion. Hundreds have been issued in just the past 30 days!

TEMPORARY AMATEUR RADIO LICENSING

The FCC had been considering a system (Docket 93-267) that would allow new hams to become control operators immediately after passing the required examinations. The "instant authorization" would utilize a temporary call sign from the WZ-by-3 letter call sign block. A new amateur would simply use his initials and the appropriate license class identifier indicating that he/she has qualified for a specific amateur license class.

We heard that a *Memorandum Opinion and Order* decision is pending on this matter. MO&O's generally terminate pending rule making, so it now appears that amateur temporary licensing will not become a reality. But it probably is not now needed. Electronic amateur operator/station application filing is now in place (and unlike commercial radio operator licensing which can

take two months), amateurs are receiving their license information (and going on the air) within a few days of testing. VEC's, using a PC are able to file Form 610 applications over the phone lines with the FCC, in Gettysburg, PA. Applicants are now receiving "hard copies" of their station/operator license within a couple of weeks ...or less.

TEMPORARY OPERATING AUTHORITY FOR COMMERCIAL RADIO OPERATOR APPLICANTS

The Commission has amended Part 13 of the rules to permit persons who have passed the required examinations and applied for commercial radio operator licenses to perform the functions of a commercial radio operator on a temporary and conditional basis while awaiting their licenses.

A commercial radio operator license, certificate or permit (license) is required for persons who operate stations in a number of radio services. To qualify for certain of these licenses, an applicant must pass an examination that is administered under the auspices of one of the nine Commission-certified Commercial Operator License Examination (COLE) Managers.

The COLE Manager or their examiners issue a Proof-of-Passing Certificate (PPC) to an examinee who scores a passing grade on an examination element. When the examinee is credited for all examination elements required for the commercial operator license sought, the examinee may apply for license. The Commission then processes the application grants the license. The total processing time may take as long as eight weeks.

The new temporary operating authority will not apply to any person who has previously had a commercial radio operator license revoked, suspended, or is the subject of an ongoing suspension hearing. Furthermore, the Commission, at its discretion, may cancel the temporary conditional operating authority without a hearing, if the need for such action arises.

With respect to log entries, commercial operators exercising temporary conditional operating authority will enter the PPC serial number and the date of issue in place of the FCC-issued license serial number and expiration date. Possession of the PPC document will activate the operating authority and will temporarily serve in place of the license. This procedure is verifiable and simple to implement.

The Commission stated that "...amending this rule will increase the availability of licensed commercial radio operators by eliminating the license processing delay inherent in the current licensing system. Moreover, it would permit many people to commence work immediately after receiving their Proof-of-Passing Certificate." *(Action by the FCC, April 17, 1995)*

CHANGE IN HAM LICENSE STRUCTURE DENIED

The FCC has denied a request by Daniel H. Sealy, AA7OA, of Astoria, Oregon to eliminate the Novice Class and to combine the Technician Plus and the General Class license into a single operator class. This would have reduced the number of amateur service license classes to four, Amateur Extra, Advanced, General and Technician.

Sealy argued that due to the dwindling number of Novice licensees and the growth of the Technician Class, the amateur service license class structure warranted streamlining. He also believes that the written examinations for Technician and General Class operators are very similar. The FCC pointed out, however, that the Element 3A Technician questions primarily address VHF/UHF operation while Element 3B is oriented toward the medium and high frequency bands.

In denying Sealy's request, the FCC said, "We believe that the view previously expressed by the amateur service community through thousands of comments in numerous rule making proceedings continue to be valid. Hence, in our view, the amateur service community is satisfied with the current structure, the fundamental purpose of which is the encouragement and improvement of the amateur service in the United States through rules that provide for advancing skills in both the communication and technical phases of the Art. We do not, therefore, believe that the arguments that you have submitted warrant revisiting the matter at this time." *(Private Wireless Division, April 7, 1995.)*

FCC ISSUES FACT SHEET ON AMATEUR RADIO

A new information fact sheet issued April 13 by the FCC on Amateur Radio does however, recognize that the Technician Class is now the entry path of choice into ham radio. Here are some quotes:

"There are six classes of operator licenses, each authorizing varying levels of privileges. The class for which each examinee is qualified is determined by the degree of skill and knowledge in operating a station that the examinee demonstrates to volunteer examiners (VEs) in his or her community. Most new amateur operators start at the Technician class and then advance one class at a time. The VEs give examination credit for the license class currently held so that examinations already passed need not be repeated. The VEs construct the written examinations from question pools that have been made public. Helpful study guides and training courses are widely available.

The privileges of a Technician class operator include operating stations while transmitting on channels in any of 17 frequency bands above 50 MHz with up to 1,500 watts power. It also authorizes the person to

serve as a VE in helping to prepare [but not administer] certain examinations. To pass the Technician examination, at least 41 questions from a two-part 55 question written examination must be answered correctly.

The next step is "Technician Plus" operator. This license adds privileges in four long distance shortwave bands in the HF range (3-30 MHz.) In addition to the above written examination, a show slow-speed telegraphy examination at 5 words-per-minute must be passed."

The press release also mentions that the Novice license is still around "...for persons who pass the slow-speed telegraphy examination, but only pass the first part of the written examination for Technician class." *(PR-5000, No. 210, Information About the Amateur Services, released April 13, 1995)*

FCC PUTS AMATEUR DATA BASE UP ON INTERNET

Effective April 10, the complete amateur service license database is available on the Internet via the FCC's ftp site. This new service marks the beginning of electronic granting of licenses at the FCC's Wireless Telecommunications Bureau. As soon as the data for a new license appears in the database, the license is effective and all privileges of that license can be exercised by the licensee. Licensees will no longer need to wait to receive a license document in the mail. New licensees can use the Internet as proof of licensing and go on the air immediately, even if they have not received the license document from the Commission.

The database will be updated every Monday by noon and daily updates will be posted on a five workday cycle (i.e. Monday's data will be overlayed by the following Monday, Tuesday's data will be overlayed by the following Tuesday, etc.)

Information can be retrieved from the amateur service license database using the following procedure:

```
Access:     anonymous ftp fcc.gov
Directory:  pub/XFS_AlphaTest/amateur
Files:      Full database:  amateur.zip
            Daily updates:  mon.zip, tue.zip,
                            wed.zip, thu.zip, fri.zip
            Documentation: readme.txt
```

If you have questions concerning the data on the amateur service license database, please contact the FCC's Consumer Assistance staff located in Gettysburg, PA (800) 322-1117 or (717) 337-1212.
PUBLIC NOTICE, FCC, Washington, DC, April 13, 1995

● What the Public Notice did not say (and the Consumer Assistance people at Gettysburg, PA will not know), is that these files are in compressed form and

must be unzipped using the PKUNZIP.EXE utility. Also the total amateur database is 32 Mbytes in size and unzips to about 144 Mbytes - more than the capacity of most hard drives. Daily transactions are from 2 to 10 Kbytes long - expanding to 4 to 100 Kbytes.

Each of the compressed files expands to 6 files - each of which contain parts of a licensee's record. For example the application data is in the "appl.dat" file, but the licensee's operator class is in the "indiv.dat" file, etc.

The W5YI-VEC (and we assume all other VECs) will be downloading and decompressing these files on a daily basis and loading the information in a relational database. (The data cannot be accurately read without this additional program since the separate files must be combined to read a record.)

Effective immediately, any applicant taking a W5YI-VEC examination or any W5YI-VE team may obtain new (or changed) amateur call signs by telephoning 817/548-8200 during normal business hours: 8:30 a.m. to 4:30 p.m. - Monday through Friday.) It is better, however, to wait until after 9:30 a.m. to insure that we have had time to load in the previous days license grants.

"How soon after testing should I expect to get my call sign!" ... is getting to be an extremely common question - and one that can be complex to answer! New call signs "can" be available anywhere from 24 hours to "weeks" after testing. (We have had some of both!)

It all depends upon how fast the VE team gets the data to the VEC for screening and subsequent electronic retransmission to the FCC. Some applications must be returned to the VE team or applicant for correction. On the average, a new call sign should be available between one and two weeks after testing.

NTIA ON AMATEUR SERVICE SPECTRUM NEEDS

The National Telecommunications and Information Administration, part of the U.S. Department of Commerce, has issued projections for U.S. spectrum requirements. NTIA staff observed that the projections don't constitute a "mandate for rulemaking" at the FCC and that there is no immediate way to satisfy all of the spectrum requirements.

Much of the additional spectrum required would go to new types of mobile communications services and to satellite feeder links, but the Amateur Service was not left out. Much of the input from the Amateur Service came from ARRL and AMSAT. The agency said,

"Amateurs have historically been on the leading edge of radio technology. As new solid-state devices become available, amateurs will use them in radio systems to push the upper limits of practical spectrum usage. It is expected that the current analog systems employing single-sideband, FM voice, and television modulation will be overtaken by digital techniques. The number of amateur radio operators is increasing at a current annual rate of 7.5 percent in the United States, and about 7 percent worldwide. Growth in the amateur service will require increased use of higher frequencies, and necessitate the use of radio repeaters to overcome the limitations imposed by the propagation characteristics of the higher frequency bands.

"Some of the frequency bands shared by amateur operations are becoming heavily used. For example, the 902-928 MHz band will become more used with the increased use of LMS (Location and Monitoring Service) systems and possibly by Federal and non- Federal wind profiler radars. Radiolocation bands, which have been shared with amateurs for years, will become more valuable to military users as new radar systems are deployed and pressure for the bands to be used for nongovernment purposes increases.

"The amateur-satellite service will soon have a new generation of amateur satellites in orbit using all frequency bands allocated to the amateur-satellite service from 29 MHz through 24 GHz. The Phase 3D OSCAR (Orbiting Satellite Carrying Amateur Radio) satellite is scheduled to be launched in late 1995. This satellite is designed to be an improvement over current OSCAR satellites in terms of link performance and capabilities. The OSCAR 3D satellite will facilitate the use of gateway earth stations, so that an amateur operator with a hand-held radio will be able to reliably communicate with other amateurs over a distance of several thousand kilometers.

"In general, we believe that current amateur and amateur-satellite allocations should be retained. Amateur requests for international reallocations would be appropriate issues for FCC private sector advisory committees addressing U.S. preparations for future World Radiocommunication Conferences (WRCs). Additional allocations at 160-190 kHz, and near 5 MHz will require technical studies to determine the availability of these bands to support amateur use.

"The expansion and upgrading of amateur allocations in the 10, 14, 18, and 24 MHz bands are acceptable, but will depend on future decrease of requirements for the aeronautical mobile or the fixed services internationally. The alignment of the amateur 3.5 and 7 MHz bands worldwide will require the inclusion of these issues in U.S. preparations for future WRCs.

"The request for additional narrow spectrum allocations between 30 and 50 MHz for propagation experimentation (e.g., five, 50 kHz slots) will need to be studied for technical compatibility. Spectrum requirements for the amateur service total 2,180 kHz.

"However, any sharing of military radiolocation spectrum (e.g., 430-440 MHz) with the amateur services on a co-primary basis in current Federal radiolocation bands is not feasible because of the potential loss of operational flexibility for military radar systems. Further, the expansion of use in the 902-928 MHz band by federal and non federal users, including the operation of wind profiling radars, may make this band untenable for amateur operations in the future."

ARRL & AMSAT REQUESTED AMATEUR AND AMATEUR-SATELLITE FUTURE SPECTRUM ALLOCATIONS

(Some of these allocations are the subject of pending or recently completed FCC action. For example, the Amateur Service was granted access at 219-220 MHz for fixed digital links. - Ed.)

Band, kHz:	Requested Allocation,	Notes
160-190 kHz	New allocation (Shared)	(a, b)
1800-1900	Retain	
1900-2000	Retain	
3500-4000	Retain, but add 300 kHz worldwide	(a, c)
5000	New allocation (shared)	(a, d)
6900-7200	New allocation: exclusive, worldwide	(a, e)
10100-10350	New allocation: primary worldwide	(a, f)
14000-14250	Retain	
14250-14400	New allocation	(a, g)
18068-18318	New allocation: exclusive, worldwide	(a, h)
21000-21450	Retain	
24740-24990	New allocation: exclusive, worldwide	(a, i)
Band, MHz:		
28.0-29.7 MHz	Retain	
29.7-30.0	New allocation	(a, j)
Between 30-50	New allocation	(a, k)
50-54	Retain, extend into Region 1	(a, l)
144-146	Retain; delete RR 605, 606	(a, m)
146-148	Retain, extend into Region 1	(a)
Part of 216-220	New allocation	(n)
222-225	Retain	
420-430	Retain	
430-440	Revised allocation: exclusive, worldwide	(a, o)
440-450	Retain	
902-903	Revised allocation (upgrade to primary)	(p)
903-928	Retain	(p)
1240-1260	Retain	
1260-1300	Revised allocation (upgrade to primary)	(a, q)

2300-2310	Retain	
2390-2400	New allocation (add Amateur-Satellite, upgrade to primary)	(a, r)
2400-2402	New allocation (add Amateur-Satellite, upgrade to primary)	(a)
2402-2450	Revised allocation (upgrade to primary)	(s)
3300-3400	Retain	
3400-3402	Revised allocation (upgrade Amateur-Satellite to primary)	(a)
3402-3420	Revised allocation (upgrade to primary)	(a, t)
3420-3500	Retain	
5650-5668	Retain	(s)
5668-5670	Revised allocation (upgrade Amateur and Amateur-Satellite to primary	(a)
5670-5848	Retain	(u)
5848-5850	Revised allocation (upgrade Amateur and Amateur-Satellite to primary	(a)
5850-5925	Retain	
Band, GHz		
10.00-10.45 GHz	Retain	
10.45-10.50	Revised allocation (upgrade Amateur and Amateur-Satellite to primary	(a)
All above 24	Retain	(v)

NOTES:

[a] Allocation must also be approved at competent World Radiocommunication Conferences

[b] New allocation would be secondary to the fixed and maritime mobile services nationally. Additionally, must share with the broadcasting service in ITU Region 1, and aeronautical radionavigation in ITU Region 3.

[c] The requirement is for any common, worldwide exclusive 300 kHz allocation within the 3500-4000 kHz band.

[d] Requirement is for about 50 kHz near 5 MHz, on a shared basis. Particularly desirable for communications during solar cycle minima when maximum usable frequencies are below 3.5 MHz.

[e] The requirement is for 300 kHz aligned worldwide to reduce sharing with high frequency broadcasting in the 7100-7300 kHz band; 6900-7200 kHz was requested.

[f] A modification of the present 10100-10150 kHz allocation, requiring elimination or downgrading of the fixed service internationally.

[g] The requirement is for an additional 50 kHz primary, exclusive, worldwide.

[h] The requirement is for an additional 150 kHz to the present 18068-18168 kHz allocation.

[i] The requirement is for an additional 150 kHz to the present 24890-24990 kHz band allocation.

[j] The requirement is for amateur-satellite (space-to-Earth)

[k] The requirement is for a number (e.g., five) of narrow bands of frequencies between 30 and 50 MHz.

[l] A 2 MHz allocation in ITU Region 1 is requested, with at least 500 kHz being exclusive.

[m] The deletion of RR 605 & 606 is requested. These footnotes allow operation other than amateur in certain countries.

[n]   Amateurs requested access to a portion of the 216-220 MHz band. The ARRL petitioned the Commission for additional access. The Commission (ET Docket No. 93-40, RM-7747) has proposed to allocate the 219-220 MHz band for amateur use.

[o]   Requested for amateur television, voice and data communications, and Earth-moon-Earth communications.

[p]   This band presently used by LMS systems, which have priority over amateur operations. The proposed LMS systems would also have priority. Non-government primary allocation is for ISM operations on 915 MHz +/- 13 MHz.

[q]   Additionally, the removal of the directional Earth-to-space indicators is requested to increase the flexibility of amateur satellite use.

[r]   Expand the amateur-satellite allocation by 10 MHz in the 2390-2400 MHz band.

[s]   Retain amateur-satellite allocation in accordance with RR 664.

[t]   Amateur-satellite allocations in the 3400-3410 MHz band are to be expanded to ITU Region 1.

[u]   Retain amateur-satellite allocation in accordance with RR 808.

[v]   Retain all current amateur and amateur-satellite allocations above 24 GHz.

AMATEUR RADIO INFORMATION ON THE WWW

There are hundreds of amateur radio file servers spewing out gigabytes of ham radio information on the Internet. Some are even located on other continents and can be accessed as easily as a server in the next room!

Here is a sample of some of the Internet file servers that are dedicated to radio hobby information. It is far from complete and new information servers are popping up daily! To access a file server, you simply type in the URL (Universal Resource Location) into your WWW browser software. It is really very easy ...providing you do not make an error in entering in the characters! Do NOT type in the quote (") marks.

Collections of Ham Radio Data
"http://galaxy.einet.net"
   Amateur Radio (Leisure and Recreation) EINET
"http://www.mcc.ac.uk:80/OtherPages/AmateurRadio.html"
   Amateur Radio (UK)
"telnet://callsign.cs.buffalo.edu:200/"
   Amateur radio - Ham Radio Callsign Database
"http://www.acs.ncsu.edu:80/HamRadio"
   Amateur Radio Server, North Carolina State
"http://www.webcom.com:80/~arfunk/amrad.html"
   KB7UV's Amateur Radio Resources on the 'Net
"http://www.acs.ncsu.edu/HamRadio"
   Amateur Radio Web Server
"http://www.cis.ohio-state.edu/hypertext/faq/usenet/radio/
   ham-radio/faq" Ham radio FAQ (Common Questions)
"ftp://ftp.ucsd.edu//hamradio" University of California at San
   Diego Anonymous FTP Server for Amateur Radio files

"ftp://ftp.cs.buffalo.edu/pub/ham-radio" University of Buffalo
   Anonymous FTP Server for Amateur Radio files

Various Directories
"gopher://MAINE.maine.edu/11/MISCINFO/Amateur%20radio%
   20information" Amateur Radio Info at University of
Maine "telnet://enter help@callsign.cs.buffalo.edu:2000"
   Ham Radio Callbook Server / SUNY at Buffalo
"http://www.accessnv.com:80/hrshow/"
   HR Showcase Amateur Radio WWW
"http://buarc.bradley.edu:80/wwwvl-ham.html"
   The World-Wide Web Virtual Library: Amateur Radio
"ftp://ftp.netcom.com/pub/VE/VE3SUN/www/home.html"
   VE3SUN Ham ftp sites and mailing lists
"http://sst.lanl.gov:80/~jdport/"
   WB5AOX Home Page (Packet, Homebrew, etc)
"http://kzsu.stanford.edu:80/other-radio.html"
   WWW index of Noncommercial Radio sites
"http://www.acs.ncsu.edu/scripts/HamRadio/repeaterdb"
   Repeater searchable database
"http://www.cis.ohio-state.edu/hypertext/faq/usenet/radio/
   ham-radio/hams-on-usenet" Hams on Usenet
"http://www.cis.ohio-state.edu/hypertext/faq/usenet/radio/
   ham-radio/elmers" Elmers on the Internet

Amateur Radio Organizations
"http://www.Amsat.org:80/amsat/AmsatHome.html"
   The Radio Amateur Satellite Corporation - AMSAT
"http://lorien.qualcomm.com:80/amsat/"
   AMSAT-NA Web Server.
"http://www.acs.oakland.edu/barc/arrl.html"
   ARRL American Radio Relay League
"http://www.nasa.gov/sarex/sarex_mainpage.html"
   Shuttle Amateur Radio Experiment (SAREX)
"http://www.acs.ncsu.edu/HamRadio/News.html"
   Amateur Radio Newsline by WA6ITF

Commercial Organizations
"http://www.acs.oakland.edu:80/barc/ham-more/ham-more
   .html"= Ham Radio and More Radio - AM Radio Show
"http://www.skypoint.com:80/subscribers/jrlewis/radio.html"
   Radio City Inc.

Amateur Radio Callbook Servers
"http://www.mit.edu:8001/callsign"
   HTML version of Callbook Server
"http://www.rahul.net/perens/LinuxForHams"
   Linux for Hams
"ftp://oak.oakland.edu/pub/hamradio" Oakland University
   Anonymous FTP Server for Amateur Radio files

Digital Communciations and Packet Radio
"http://www.cis.ohio-state.edu/hypertext/faq/usenet/radio/
   ham-radio/digital-faq" Packet radio FAQ
"http://hydra.carleton.ca/articles/hispeed.html"
   High Speed Packet Radio guide
"http://dingus.n5lyt.datarace.com:80/tapr/html/pkthome.html"
   The Packet Radio Home Page
"http://www.webcom.com/~arfunk/rats.html"
   Radio Amateurs Telecommunications Society (Packet)
"http://www.tapr.org/tapr"
   Tucson Amateur Packet Radio (TAPR) home page

Slow Scan TV

"http://www.ultranet.com/~sstv/" SSTV Home Page
"http://www.gate.net/~riehman/" WB4EJC - Slow Scan TV

Amateur Radio Clubs

"http://archive.phish.net/BRC" K1AD (Brown University)
"http://www.phoenix.net:80/~biekert/index.html"
    Clear Lake Amateur Radio Club, Houston, TX
"http://www.cc.columbia.edu/~fuat/cuarc/"
    W2AEE (Columbia University)
"http://w3eax.umd.edu/w3eax.html"
    W3EAX (University of Maryland)
"http://macgwy-mac2.gsfc.nasa.gov/garc/wa3nan-home-page.
    html" WA3NAN, (Goddard Space Center)
"http://www.calpoly.edu/~dmalone/w6bhz/"
    W6BHZ (Cal Poly Amateur Radio Club)
"http://w6yx.stanford.edu/w6yx.html"
    W6YX (Stanford Amateur Radio Club)
"http://www.acs.oakland.edu/barc.html" Boston ARC
"http://www.mcc.ac.uk/OtherPages/AmateurRadio.html"
    Manchester Computing Centre
"http://spectrum.bradley.edu:80/index.html"
    Bradley University Amatuer Radio Club
"http://www.mcc.ac.uk/OtherPages/TraffordARC/Trafford.html"
    Trafford (England) ARC
"http://server.systemtechnik.tu-ilmenau.de/ham.html"
    Technical University of Ilmenau
"http://jupiter.sun.csd.unb.ca:7000/"
    University of New Brunswick
"http://www.sp.nps.navy.mil:80/npsarc/k6ly.html"
    Naval Postgraduate School Amateur Radio Club
"http://www.freenet.ufl.edu/~gars" Alachua Free-Net Ham
    Radio Home Page - Gainesville Amateur Radio Society
"http://www.ccnet.com:80/~rwilkins/"
    CAVE California Amateur VHF Enthusiasts
"http://erau.db.erau.edu:80/~bellm/erara.html" Embry-Riddle
    Aeronautical University Amateur Radio Association
"http://www.metu.edu.tr:80/~melih/radyoodtu.html"
    METU Radio Society
"http://pegasus.cc.ucf.edu:80/~mikep/ucfarc.html"
    University of Central Florida Amateur Radio Club
"http://fas-www.harvard.edu:80/~w1af/"
    Harvard Wireless Club - W1AF
"http://www.rpi.edu:80/dept/union/w2sz/www/" W2SZ
    Rensselaer Polytechnic Institute - Amateur Radio Club
"http://w3eax.umd.edu:80/w3eax.html"
    W3EAX - University of Maryland
"http://w5ac.tamu.edu:80/"
    W5AC - Texas A&M Amateur Radio Club
"http://w6yx.stanford.edu:80/w6yx.html"
    W6YX Stanford Amateur Radio Club
"http://www.shore.net:80/~ken/nsrahome.htm"
    North Shore Repeater Association
"http://www.webcom.com:80/~arfunk/rats.html"
    Radio Amateur Telecommunications Society

Scanning

"http://www.cc.columbia.edu/~fuat/cuarc/fcc-bandplan.html"
    FCC Frequency allocations from 535KHz to 300 GHz
"ftp://ftp.okc.com/pub/freq-out/" = Frequency Lists

"FAIRS" RECEIVES MAJOR $24,873 GRANT

A proposal, written by David Larsen KK4WW of Floyd, VA and Victor Goncharsky US5WE, has been approved for $24,873 by the United States Agency for International Development through the Eurasia Foundation. The installation of the "Ukrainian Digital Radio Network" by FAIRS Ukraine and USA will increase the communications capability internally and internationally for thousands of Ukrainian ham radio operators. The equipment needed for such a network is almost impossible to build at home and Ukrainian hams are mainly using ancient tube-type equipment.

This communications capability will benefit not only the hams but the citizens of the Ukraine by allowing rapid response to emergencies/disasters for individuals, official and unofficial groups, and government emergency teams. The goal of this project is to set up a nationwide network of digital mailbox amateur radio stations operated by volunteer hams.

VHF-DXers HIT THE HIGH SEAS IN JUNE!

On June 18 through 25, several hundred amateur operators will take part in a Yaesu DX Caribbean cruise that will place specific emphasis on VHF and UHF operation.

Chip Margelli, Yaesu's "cruise director," K7JA, comments "We plan to be on the air on both VHF as well as UHF aboard our cruise ship in some really rare grids. Course corrections due to ship traffic, weather and tides, may effect the grids entered, but I guarantee our excursions into these rare grids will find us on the air."

Grid Square & Location:	Dates/June:
FK-42 Aruba	16, 17, 18
FK-53, 63, 74, 84, 85, 95 Dominica	19 & 20
FK-95, 94, 93 Barbados	21
GK-03, FK-93 Martinique	22
FK-94, 84, 83, 73, 63, 62, 52 Curacao	23& 24
F52, 42	25

VHF/UHF maritime mobile DXer Gordon West, WB6NOA says "We have an ambitious operating schedule planned for our cruise to give out these valuable grid squares, and we have equipment for 50, 144 and 432 MHz SSB." The equipment also includes major antennas and power amplifiers for moon-bounce operations on board ship as well as on shore.

"Amateur operators who plan to work us maritime mobile as well as ashore during our Yaesu DX Caribbean cruise in June should contact us well ahead of time to set up some specific schedules," adds West.

For more information and additional details about the Yaesu DX Caribbean cruise contact Yaesu USA, "Chip" Margelli, K7JA, 17210 Edwards Road, Cerritos, CA 91703 - FAX 310/404-4828.

● The Heritage Foundation says that the FCC needs a radical overhaul. "The American taxpayer and consumer will pay a heavy price" if Congress "...fails to scale back the size and power of the Federal Communications Commission.

·"Like all such federal agencies, the FCC will regulate more heavily when given the money and people with which to do so." The foundation wants the agency downsized or abolished. If eliminated, standardization could be handled by industry and enforced by the courts. Spectrum would be auctioned and the FCC's regulatory functions could be turned over to the states. *(Broadcasting & Cable, April 10, 1995.)*

● **"Prepare for cuts. You are not going to get what you asked for,"** is the word that FCC Chairman Reed Hundt got from the House Appropriations Committee. The FCC had requested $223 million for fiscal 1996. Hundt said the FCC's 1996 budget amounted to only 2.5% of the $9 billion his agency had raised during the past year by spectrum auctions. *(Broadcasting & Cable, March 27, 1995.)*

● **Wording banning indecency on the Internet and on-line services has been added** to the Senate's version of the telecommunications-reform bill.

The *Communications Decency Act of 1995* seeks to prohibit the transmission over the Internet of "obscene, lewd, lascivious, filthy or indecent" pictures, e-mail, files or online communications. Senator Jim Exon (D-Neb.) wrote the legislation. The penalty for violations is up a $100,000 fine and two years in jail.

There is a question, however, as to whether the decentralized Internet which is governed by no one - can be controlled by anyone. And there are nagging free speech and privacy issues.

Online companies are concerned that they could be held liable for material posted by subscribers that travels over their networks. A picture posted in Denmark might be legal ...but ruled smutty in the United States.

Senator Frank Leahy (D-Vt) has come up with an alternative bill which would look into technological ways of enabling parents to control which on-line services their children can access rather than an across-the-board Internet

censorship to everyone. *(Broadcasting & Cable, April 10, 1995, New York Times News Service, Time magazine, April 3, 1995.)*

● **"You read it here first" department!** Fortune magazine has an article entitled "**How to cut your Phone Bill by 96%.**" It says you can make phone calls over the Internet "...using the microphone and speakers that come with most PCs." It goes on to say you can call internationally for only the cost of an Internet connection "...about $1 or $2 per hour..." The lowest priced telephone call to Hong Kong is "...about $1.00 per minute."

You need special low price Vocal-Tec (Windows) software and only simplex (one-way-at-a-time) conversations are permitted "...like a CB radio." *(Fortune magazine, May 1, 1995, p.21.)*

● **Long range planning.** The ARRL will increasingly orient its future efforts toward members who are active solely on VHF and higher frequencies. While HF operation will continue to be significant, the forecast is that the nucleus of League members will be more computer literate and communicate more without the use of Amateur Radio. The ARRL sees protecting amateur radio spectrum as one of its most important duties.

● **Start Your Own On-Line Service!** Only 5% of U.S. households are connected to the Internet. The $1.3 billion consumer online business is dominated by America On-line, CompuServe and Prodigy.

The "trendiest part" of the Internet is the World Wide Web. Even the "lowliest entrepreneur" can set up shop or publish on the WWW without going through existing online services. You simply open your own Website by following already established standards.

Some 3 million WWW users are accessing over 16,000 Websites with special software readers called "browsers." Netscape Communications Corporation, is the "hot company" in navigational browsers.

The fastest growing commercial service is America-On-Line. The most profitable: CompuServe. IBM/Sears: Prodigy is just starting to become profitable. On-line services will grow by 85% this year ...to 9.6 million. But there is big room for growth. (60 million

homes have cable TV!) Turnover - or "churn rate" is a problem. Some 40% of users change services every year!

The Internet is harder to use than a commercial online service. And the lack of security is also a major concern. Navigation software development "...threatens to nuke the online services." Internet access provider revenue is up 40% over last year ...to more than $125 million. If Internet access cost becomes less than an on-line service, many users will switch.

AT&T is "scrambling" to get their "Interchange" service on-line for which they paid Ziff-Davis some $50 million last December. It will be marketed as a business-to-business service. AT&T also owns the 50,000 subscriber "Imag-iNation" online game service.

Right now, Prodigy is the simplest way to "surf the Net." America On-Line tripled its subscribers last year to 1.6 million. AOL is currently testing Web access software. And CompuServe is also in the process of providing its subscribers with Web-browser software.

Microsoft wants to make the Internet a "mainstream" activity for every PC user. They will bundle their Microsoft Network with Windows-95 which is scheduled to ship in August. A research company says some 65 million "Windows-95" users will be potential subscribers by year end. Microsoft will also be connecting its Network to the World Wide Web. *(Capsule version of 8 page Fortune feature article, May 1, 1995)*

● **You've heard of the World Wide Web's HTML (Hypertext Markup Language) now VRML is on the way.** Virtual Reality Markup Language will allow 3-D video scenes to be transferred to your PC. *(Byte, April 1995)*

● Southwestern Bell's incoming circuits to Oklahoma City were quickly overloaded due to the bomb explosion at the Federal Building on April 19th. Jim Wells, Engineer-in-Charge of the **Dallas FCC Field Office declared a Voluntary Communications Emergency** to facilitate the handling of emergency traffic between 3897-3903, 3922-3928 and 7243.5-7249.5. Both IARN and ARRL were notified. Amateur health and welfare networks were also established on 7273 and 7290 (daytime) and 3873 and 3935 during the evening.

NEW CORDLESS TELEPHONE CHANNELS ADDED

The FCC has added new frequencies for cordless telephones. The Commission says in an Order released April 10th that the fifteen additional channels will relieve channel crowding and reduce interference to existing cordless telephone service.

A cordless telephone is a two-way power radio system that consists of a "base" unit and a "remote" handset. The base unit and the handset are connected by a radio link that eliminates the handset cord of the standard telephone, thus allowing the user to move away from the base unit while carrying on a telephone conversation.

There are currently ten pairs of frequencies available at 46 and 49 MHz for cordless telephones. These 20 kHz maximum bandwidth channels are centered on:

Base transmitter	Handset transmitter
46.610 MHz	49.670 MHz
46.630 MHz	49.845 MHz
46.670 MHz	49.860 MHz
46.710 MHz	49.770 MHz
46.730 MHz	49.875 MHz
46.770 MHz	49.830 MHz
46.830 MHz	49.890 MHz
46.870 MHz	49.930 MHz
46.930 MHz	49.990 MHz
46.970 MHz	49.970 MHz

The congestion problem is compounded by the fact that five of the existing ten channels are available to other low power transmitters such as baby monitors.

Sales and use of cordless telephone has grown steadily over the years and it is estimated that more than 60 million cordless telephones are currently in use.

On August 20, 1992, a petition was filed by the Telecommunications Industry Association seeking additional frequencies for cordless telephones. A year later, the FCC proposed to make 15 additional channel pairs available as suggested by the TIA. The 30 new frequencies are:

(Base transmitter)

43.72, 43.74, 43.82, 43.84, 43.92, 43.96, 44.12, 44.16, 44.18, 44.20, 44.32, 44.36, 44.40, 44.46, 44.48 MHz and;

(Handset transmitter)

48.76, 48.84, 48.86, 48.92, 49.02, 49.08, 49.10, 49.16, 49.20, 49.24, 49.28, 49.36, 49.40, 49.46, 49.50 MHz.

The FCC said that cordless telephones operating on these new frequencies must incorporate a mechanism for automatically monitoring and preventing activation on any occupied channel. The new channels will more than double the spectrum available to cordless telephones. The close proximity of the new and current frequencies will permit economical design of cordless telephones that use both the existing and the new frequencies.

While not opposing the allocation, the American Radio Relay League expressed concern about the susceptibility of cordless telephones to interference. ARRL suggested that the FCC issue a public notice warning consumers of cordless telephones that they may be subject to interference, and that in such cases, no interference protection is offered, and that transmitter operators are not obligated to resolve any such interference.

Several commercial groups that currently use these frequencies did oppose the use of 44/49 MHz frequencies for cordless telephones. Various petroleum, forestry and utility associations said that cordless telephones have the potential to interfere with their services which "...have a need for reliable, around-the-clock and interference-free communications, especially in the event of a public emergency." They argued that the needs of cordless telephone users can be met by cellular telephones and other personal communications services.

The FCC said the public should have a choice of many diverse products, including low cost cordless telephones, to satisfy their communications needs. Furthermore, the automatic channel selection feature would select an unoccupied pair of frequencies.

Broadcasters also opposed the new proposed cordless telephone allocations. The FCC says they found cordless telephones to be compatible with broadcast TV receivers - including those that employ an IF amplifier with a 41 to 47 MHz band-pass. Cordless telephones use extremely low power and the interference potential exists only when they are located near a TV receiver. Since the new 44 MHz frequencies are located in the IF pass band of TV receivers, the FCC designated these lower frequencies for base units which could be stationed away from television sets." Manufacturers will also be required to alert consumers to the potential for TV interference if the base of a cordless telephone is placed near or on top of the TV or VCR.

The FCC agreed that "Cordless telephone users will be responsible for eliminating any interference that might result from the operation of cordless telephones on the new frequencies."

The FCC did not specify a frequency pairing scheme. Instead the new lower 44 MHz frequencies are designated for base units and the 49 MHz frequencies will be used for the handset to base link. Channel pairing may be accomplished by pairing any of the fifteen base transmitter frequencies with any of the fifteen handset transmitter frequencies.

The new rules are effective 30 days after publishing in the Federal Register.